

## REMARKS

In the Official Action mailed on **September 23, 2004** the Examiner reviewed Claims 1-45. Claims 1-17, 18-31 and 32-45 have been restricted out as three separate inventions. Claims 1-17 were rejected under 35 U.S.C. §102(b) as being anticipated by Santhanam, U.S. Patent No. 5,704,053.

### Election/Restrictions

Applicant hereby elects without traverse to prosecute the invention in Group I claims 1-17. Claims 18-45 were withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no generic or linking claim.

Accordingly, Applicant has canceled claims 18-45 without prejudice.

### Rejections under 35 U.S.C. §102(b)

Claims 1-17 were rejected under 35 U.S.C. §102(b) as being anticipated by Santhanam, U.S. Patent No. 5,704,053.

Applicant respectfully points out that Santhanam teaches away from the present invention. Specifically, Santhanam teaches that a Basic Induction Variable (BIV) *“is said to have a well-defined loop increment if the total amount by which the BIV is incremented is the same on every loop”* (see Santhanam, col. 11, lines 43-45). Furthermore, Santhanam teaches that memory references *“involving a BIV with a well-defined net loop increment that is a compile-time constant ... are the only memory references that are further analyzed for data prefetching purposes”* (see Santhanam, col. 12, lines 18-22). Hence, the invention in Santhanam **does not** optimize loops in which the stride is a constant value for some (but not necessarily all) loop iterations.

In contrast, the present invention is directed towards optimizing loops in which the “*stride is a constant value for some (but not necessarily all) loop iterations*” (see page 13, lines 25-27, page 14, lines 5-7 of the instant application).

Note that the present invention can optimize two kinds of loops: those in which (a) the stride is a constant value for all loop iterations, and (b) the stride is a constant value for some, but not all, loop iterations. On the other hand, Santhanam can only optimize the first kind of loop (in which the stride is a constant value for all loop iterations). As a result, the present invention can optimize more kinds of loops than Santhanam, which is advantageous because it can improve the overall performance of the code.


Accordingly, Applicant has amended independent claims 1, 8, and 13 to further specify that the stride value is constant for some (but not necessarily all) loop iterations. These amendments find support on page 13, lines 25-27 and page 14, lines 5-7 of the instant application.

Hence, Applicant respectfully submits that independent claims 1, 8, and 13 as presently amended are in condition for allowance. Applicant also submits that claims 2-7, which depend upon claim 1, claims 9-12, which depend upon claim 8, and claims 14-17, which depend upon claim 13, are for the same reasons in condition for allowance and for reasons of the unique combinations recited in such claims.

**CONCLUSION**

It is submitted that the present application is presently in form for allowance. Such action is respectfully requested.

Respectfully submitted,

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